AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1.   (currently amended)   A method for managing torque in a hybrid electric vehicle with a variable displacement ~~on-demand (DOD)~~ internal combustion engine (ICE), an electric machine and a battery, comprising:

operating the ~~DOD~~ ICE in an activated mode where all cylinders are active;

transitioning the ~~DOD~~ ICE from the activated mode to a deactivated mode where the engine is operating with less than all cylinders active; and

smoothing disturbances in ICE torque during the deactivation transition using the electric machine.

2.   (original)   The method of claim 1 wherein the step of smoothing disturbances comprises generating electricity from excess ICE torque when the ICE torque is greater than a desired torque.

3.   (original)   The method of claim 2 further comprising storing the electricity in the battery.

4. (original) The method of claim 1 wherein the step of smoothing disturbances comprises using the electric machine to supply torque when the ICE torque is less than a desired torque.

5. (currently amended) The method of claim 1 further comprising:

transitioning the ~~DOD~~ ICE from the deactivated mode to the activated mode; and

smoothing disturbances in ICE torque during the reactivation transition using the electric machine.

6. (original) The method of claim 5 wherein the step of smoothing disturbances comprises using the electric machine to supply torque when the ICE torque is less than a desired torque.

7. (original) The method of claim 5 wherein the step of smoothing disturbances comprises generating electricity from excess ICE torque when the ICE torque is greater than a desired torque.

8. (original) The method of claim 7 wherein the electricity is stored in the battery.

9.   (currently amended)   A method for managing torque in a hybrid electric vehicle with a ~~variable~~ displacement ~~on-demand (DOD)~~ internal combustion engine (ICE), an electric machine and a battery, comprising:

operating the ~~DOD~~ ICE in a deactivated mode where the ICE is operating with less than all cylinders active;

transitioning the ~~DOD~~ ICE from the deactivated mode to an activated mode where the ICE is operating with all cylinders active; and

smoothing disturbances in ICE torque during the reactivation transition using the electric machine.

10.   (original)   The method of claim 9 wherein the step of smoothing disturbances comprises using the electric machine to supply torque when the ICE torque is less than a desired torque.

11.   (original)   The method of claim 9 wherein the step of smoothing disturbances comprises using the electric machine to generate electricity from excess ICE torque when the ICE torque is greater than a desired torque.

12.   (original)   The method of claim 11 wherein the electricity is stored in the battery.

13.   (currently amended)   The method of claim 9 further comprising:

transitioning the ~~DOD~~ ICE from the activated mode to the deactivated mode; and

smoothing disturbances in ICE torque during the deactivation transition using the electric machine.

14.   (original)   The method of claim 13 wherein the step of smoothing disturbances in ICE torque comprises using the electric machine to supply torque when the ICE torque is less than a desired torque.

15.   (original)   The method of claim 13 wherein the step of smoothing disturbances comprises using the electric machine to generate electricity from excess ICE torque when the ICE torque is greater than a desired torque.

16.   (original)   The method of claim 15 wherein the electricity is stored in the battery.

17.   (currently amended)   A torque management system for a hybrid electric vehicle with a ~~displacement on demand (DOD)~~ variable displacement internal combustion engine (ICE) ~~that operates in activated and deactivated modes~~, comprising:

an electric machine; and

a torque management module that smoothes disturbances in ICE torque using the electric machine during ~~DOD~~ variable displacement transitions .

18.   (currently amended)   The torque management system of claim 17 wherein the torque management module smoothes disturbances during transitions from

~~the~~ a deactivated mode <u>where the engine is operating with less than all cylinders active</u> to ~~the~~ an activated mode <u>where the engine is operating with all cylinders active</u>.

19.   (original)   The torque management system of claim 18 wherein the torque management module commands the electric machine to generate torque when the displacement on demand ICE first transitions to the activated mode.

20.   (currently amended)   The torque management system of claim 17 wherein the torque management module commands the electric machine to smooth disturbances during transitions from ~~the~~ an activated mode <u>where the engine is operating with all cylinders active</u> to ~~the~~ a deactivated mode <u>where the engine is operating with less than all cylinders active</u>.

21.   (original)   The torque management system of claim 20 wherein the torque management module commands the electric machine to generate torque shortly after the displacement on demand ICE enters the deactivated mode.

22.   (original)   The torque management system of claim 20 wherein the torque management module commands the electric machine to generate electricity from ICE torque when the ICE enters the deactivated mode.

23.   (original)   The torque management system of claim 18 wherein the torque management module commands the electric machine to generate electricity from ICE torque shortly after entering the activated mode.

24.   (original)   The torque management system of claim 17 further comprising: an inverter that is connected to the electric machine; and

at least one battery that is connected to the inverter.

25.   (original)   The torque management system of claim 24 wherein the battery can be at least one of lead acid batteries, lithium ion batteries, and lithium polymer batteries.

26.   (original)   The torque management system of claim 17 wherein the torque management module commands the electric machine to smooth disturbances in ICE torque when the ICE torque is not equal to a desired torque.